devastating inflammation on the other. Here each case will have to be settled on its own merits.

In glaucoma with cataract, one should keep in mind the glaucoma stirred up by the flaking off of the anterior lens capsule, the "glaucoma capsulaire" of Vogt.

Under traumatic cataract, Doctor Whalman gives a rather high percentage of sympathetic ophthalmia. I have always felt that it was very rare, and this seems to be also borne out by the literature. However, the statistics on this subject are very variable, because few authors have had a chance to see a large number of cases. While many men go through a life's practice without encountering this distressing disease, it is just as well to have it always in mind so that one will not be caught unawares when such a case appears.

In regard to cataracts resulting from the use of dinitrophenol, I merely wish to report that a few weeks ago at Stanford Eye Clinic a patient was operated upon for just such a cataract. Apparently, the era of dinitrophenol cataract has not as yet ended.

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OTTO BARKAN, M.D. (490 Post Street, San Francisco). Most of us are, I think, agreed that more or less complete congenital cataracts, when present in both eyes, should be operated within the first few months of life. The choice of operation is still an open question. I should be interested to know Doctor Whalman's opinion of the relative merit of linear extraction, making the incision well within the cornea and very oblique, after a subconjunctival injection of adrenalin. The exquisite friability of the infant iris should be born in mind, and that the pupil is often difficult to dilate in this type of case.

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DEWEY R. POWELL, M. D. (242 North Sutter Street, Stockton).—We are indebted to Doctor Whalman for bringing before us this ever interesting problem of what course to follow in certain types of cataract.

The title, "Critical Decisions in Cataract Surgery," is most apt, as both the fate of the eye and the peace of mind of both patient and surgeon depend on the wisdom of the course adopted. In his opening sentence, Doctor Whalman invites discussion through disagreement, but I find myself quite in accord with the procedures outlined and can only concur in the decisions arrived at, except in the question of the treatment of unilateral cataract. I am fully aware of the oft-quoted dictum of Knapp, "Get all the vision you can when you can," and I know that the usual advice given is to operate. If there is a beginning cataract in the other eye, there can be no question as to the advisability of operation, but if there is normal vision in the good eye, I am very hesitant about suggesting any removal of the cataractous lens.

I have had two patients who, in spite of correct postoperative vision of 20/30 and 20/20, respectively, had such confusion due to inability either to fuse the unlike images or suppress one of them that they only had comfort when one eye was covered. This was true with only a weak correction on the operated eye and even without a correction. This disparity of images was so annoying that I have since followed the custom of watchful waiting in cases of unilateral cataract with normal or nearly normal vision in the other eye. The situation is explained fully to the patient, who is asked to report for regular check-up examinations so that any new developments can be appropriately met. In all other decisions, I am in accord with the essayist.

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K. C. BRANDENBURG, M. D. (110 Pine Avenue, Long Beach).—We are indebted to Doctor Whalman for his presentation of the affirmative side of the question, when to operate. Most of us are aware of a number of reasons which may well decide us against operation in the cases which Doctor Whalman feels should be submitted to surgery. These considerations are not only of a purely ophthalmic nature, but are physiologic and economic as well.

The skill of the operator, as reflected in his results, must also be a determining factor in deciding whether the probable benefits will outweight the risks which are an inevitable accompaniment of all surgery.

AS A PHARMACIST VIEWS THE PROPOSED CALIFORNIA HUMANE POUND LAW*

By JAMES J. BOYLE
Los Angeles

THE prejudices against animal vivisection remain one of the most serious obstacles to the progress of medicine, surgery, and pharmacology.

The Humane Pound Law being sponsored as an Initiative on the November, 1938, ballot will aid to intensify that prejudice.

To the general public the "Humane Pound Law" is a misnomer. The sponsors should come out in the open and call the Initiative by its proper name, "Antivivisection Act." The mothers and fathers of California must be warned of this deception of an apparently harmless title.

We pharmacists have witnessed before now many attempts to regulate, control and perhaps prevent the advancement of research in medicine. A similar proposal appeared on the ballot in 1922. It was defeated overwhelmingly. At each successive session of the California Legislature, except 1937, attempts were made to compel the Legislature to pass such a law. Every conceivable method known to modern lobbying was used; money was spent freely, threats and intimidations were employed, but the Legislature, in its wisdom, saw otherwise.

Should this proposed Initiative Act become the law of California, the education of pharmacists and of physicians and scientists would be superficial. Our knowledge of metabolism, the physiology of the digestive tract, came largely through animal experimentation and research on dogs.

Bacteriology, part of a pharmacist's education, is most essential to us if we are to continue to perform as the physician's right-hand man. The appreciation of the theory of immunology is essential in our daily work of dispensing serums and vaccines.

We are only too familiar with the noble results shown by public health records of the value of diphtheria, typhoid, scarlet fever, antitoxins, and antirabic inoculations, as well as the vaccines of smallpox and tuberculins. We are the guardians of biologics, kept under proper refrigeration, subject to emergency calls from physicians, night and day.

Antivivisectionists might well pause for a moment and give thanks that animal experimentation has saved the lives of thousands of children against infectious and contagious diseases. Yes, and also saving the lives of their pets as well.

We, as pharmacists, appreciate the economic saving to the nation that insulin has been the means of effecting. Since the discovery of insulin, men, women, and children are assured of a normal span of life. Diabetes is no longer the dreaded, incurable disease we formally knew. Insulin research has

* Read at a joint meeting of the Los Angeles County Medical Association and the Southern California Retail Druggists Association at Los Angeles on March 17, 1938.

See also editorial comment, on page 236.

played a dramatic part in this economic saving, due through experiments on dogs. Daily it is my pleasure to dispense insulin to many prominent and active citizens whose families would suffer not only an economic loss, but companionship and love for many years to come, did we not possess this beneficent research discovery.

Materia medica is a much different subject today than when I studied pharmacy. We pharmacists discuss many new potent drugs with our physicians. Without animal experimentation these new potent and specifics would not be available. Local anesthetics, digitalis derivatives, and heart problems are now fairly well controlled because of proper standardization. Chenopodium has done its part in the elimination of hookworm. Viosterol and our vitamins A, B, C, D, G, and K, are today household words given to parents by the pediatricians. Rickets, malnutrition, and dental problems are daily solved and, here again, largely because of animal standardization. Parents expect the pharmacist to guide them intelligently in their selection of vitamin products.

The pituitary extracts—Are we to be denied their continued use? For only through animal experimentation can the flow of such essential drugs pass from our great pharmaceutical laboratories, hospitals, and pharmacies to mothers, guaranteeing safe childbirth. I can well recall when the strengths of pituitary extract on the market varied from a ratio of one to eighty; what a sigh of relief, therefore, must come to every physician and pharmacist on dispensing potent drugs today, which, because of research on lower animals, standardization is much more exact.

Pharmacists look with optimism into the practically unknown field of endocrinology. Perhaps today we are facing a world of marvelous discoveries yet to be found. Our position in this field is comparable to chemistry about one hundred years ago. Only through animal experimentation can we continue to explore this most fascinating field of medicine that has given us the estrogenic products and the various glandular substances and extracts with which the pharmacist, as well as the physician, must now familiarize himself.

If we are to eradicate cancer, man's most perplexing disease, it will be accomplished, in part, through animal experimentation. Certainly it is not the intention of many of the most intelligent, but misguided citizens, to lend a hand at blocking this humane study. Surely, this group do not ask that cancer be eradicated only by experiments on their brothers and sisters.

We pharmacists have joined hands with the physician, research workers, and public health officials in spreading the gospel of health through constructive educational programs, based on facts of accomplishment. The lives of the pharmacist, Pasteur, and the physician, Jenner, still remain, and should continue, for all of us, guiding stars in overcoming disease in both human beings and the lower animals.

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PROPOSED CALIFORNIA HUMANE POUND LAW: HOW IT WOULD AFFECT MEDICINE AND PHARMACOLOGY*

By CLINTON H. THIENES, M.D.
Los Angeles

DISCUSSION *by Fred B. Moor, M. D., Los Angeles.*

SIR WILLIAM OSLER makes the statement that, in the more than two thousand years from Hippocrates to Jenner, less was done to emancipate medicine from the routine and thraldom of tradition than was accomplished in the second half of the nineteenth century by experimental medicine.[1] The Hippocrates to Jenner era was one of observation of uncontrolled phenomena of disease. The era since has been characterized by the rise of the experimental method, so ably championed by Claude Bernard seventy-five years ago. What is the experimental method? It is the method of the controlled testing of scientific concepts. The experimental method in medicine requires living beings; that means animals or human beings. Surely, the life or liberty of neither animal nor human being may justifiably be placed in jeopardy unless, by so doing, many more animals and human beings are benefited, and to a great degree. Is this the case?

KNOWLEDGE OF LIVING TISSUE ESSENTIAL

First, let us consider the training of the student of medicine. As a practitioner, he must deal with living tissues. One of the best preparations for this is to learn what living tissue is. To this end he is trained by means of experience with living animals. And the student must learn the mechanisms of drug action. Such functions and mechanisms cannot be taught on the human being nor upon dead men or dead animals, but must be learned through analytical studies on living animals. Such analytical studies usually require operative or painful procedures. Hence, the animals are anesthetized to prevent such pain. If for no other reason than to create in the student a desire to relieve pain the teacher of medical science would see to it that the animal is spared unwarranted suffering. Medical education has advanced with great strides since, and largely because of, the introduction of the experimental method in the teaching laboratory. The use of animals, then, is of great importance for the training of the doctors of the future. But the most impressive value of the use of animals in relation to medicine is in the study and control of disease.

DIPHTHERIA'S DEATH TOLL, HAD THERE BEEN NO ANIMAL EXPERIMENTATION

As examples, I wish to select but a few of many that might be chosen. Let us consider, first, diphtheria. Diphtheria has been largely a disease of children and, in its fatal form, a very painful and terrifying malady, with death by slow suffocation.

In New York City, the average number of deaths per year from diphtheria during the seventeen years 1878 to 1894 was 144 per 100,000 popu-

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